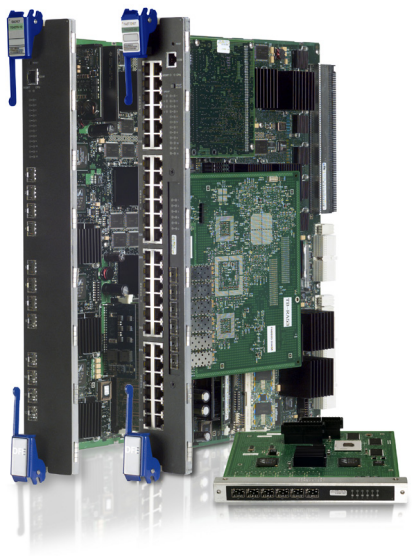
enterasys® Secure Networks™

DATASHEET

N-Series Platinum DFE

Convergence-ready, 10GE Modular L2/L3/L4 Switch for Edge-to-Core and Data Center



Multiple deployment scenarios for edge, distribution, core, and data center

Distributed fault-tolerance architecture assures network reliability and business continuity

Industry-leading ROI proven over more than 10 years

Flow-based architecture optimized for iSCSI and Server Virtualization

High-density, 10/100, 10/100/1000, 10 Gigabit Ethernet and PoE modules utilize a total switching capacity of 1.68 Terabits per second

Product Overview

The N-Series Platinum Distributed Forwarding Engines (DFEs) support the full range of Secure Networks features, but are primarily designed for deployment in network edge and distribution roles, with support for up to 1000 downstream users/devices on a single port (2000 per chassis) with full distributed fault-tolerance capabilities. The advanced routing license and per-port policy capacity license can be purchased to provide similar multi-user authentication and routing scalability as the Diamond DFEs. Platinum DFEs provide a broad range of Ethernet connectivity ranging from 10/100 to 10 Gigabit Ethernet, including support for Power over Ethernet (PoE).

Unlike competing solutions, the N-Series implements a granular, flow-based architecture to intelligently manage individual user and applications—not just ports and VLANs. Policy rules combined with deep packet inspection can intelligently sense and automatically respond to security threats while improving reliability and Quality of Service (QoS).

The N-Series features a distributed, fault-tolerant architecture with scalable capacity that does not rely on centralized processors or fabric modules. Each DFE is an integrated switching, routing, and management module that makes forwarding decisions, enforces security policies, and classifies incoming traffic. This distributed architecture has proven itself in some of the largest and most complex networks in the world.

Platinum DFEs are interchangeable in any N-Series chassis, delivering leading performance, reliability, and security for today's enterprise network. These modules intelligently integrate switching, routing, and management functions to deliver visibility and control without sacrificing performance or QoS.

Benefits

Business Alignment

- Performance, reliability, and security embedded into the architecture enable timely and reliable delivery of mission-critical applications
- Open convergence support for voice, video, and data networks enable automatic discovery, classification, and prioritization of voice solutions from ANY of the leading IP telephony vendors
- Policy-based networking ensures the network can automatically adapt every time there is an add, move, or change

Operational Efficiency

- Policy-based approach eliminates configuration complexity and enables infrastructure independence from ACLs, VLANs, and subnets
- Flexible configuration and expansion options enable quick and cost effective connectivity enhancements while scaling performance and capacity with each new blade
- Automated configuration management improves serviceability

Security

- Only switch in the industry to provide multi-user authentication for discrete users sharing a high bandwidth link
- Policy rules combined with deep packet inspection intelligently sense and automatically respond to security threats while improving reliability and quality of the user experience
- Network, user, and host security protect the business against network misuse and controls access to resources and confidential information

Support and Services

- Industry-leading customer satisfaction and first call resolution rates
- Personalized services, including site surveys, network design, installation, and training

There is nothing more important than our customers.

Density and Performance

The N-Series provides high performance and high density:

Platinum DFE	N1	N3	N5	N7
Performance (Mpps)	13.5 Mpp	40.5 Mpps	67.5 Mpps	94.5 Mpps
Capacity	18 Gbps	54 Gbps	90 Gbps	126 Gbps
10/100 Base-TX Ports	72	216	360	504
100 Base-FX Ports	54	162	270	378
10/100/1000 Base-TX Ports	72	216	360	504
10/100/1000 Base-TX Ports with PoE	48	144	360	336
1000 Base-X Ports	24	72	120	168
10G Base-X Ports	4	12	20	28

Performance/Capacity

Switching Fabric Bandwidth
18 Gbps per DFE

Switching Throughput
13.5 Mpps (Measured in 64-byte packets)

Routing Throughput
13.5 Mpps (Measured in 64-byte packets)

Address Table Size
65,536 MAC Addresses

VLANs Supported
4094

Transmit Queues
4/12

Classification Rules
57,344/chassis

Memory
Main Memory: 256 MB
Flash Memory: 32 MB

Standards and Protocols

Switching/VLAN Services

- Generic VLAN Registration Protocol (GVRP)
- 802.3u Fast Ethernet
- 802.3ab Gigabit Ethernet (Copper)
- 802.3z Gigabit Ethernet (Fiber)
- 802.3ae 10 Gigabit Ethernet (Fiber)
- 802.1Q VLANs
- 802.1D MAC Bridges
- 802.1w Rapid-reconvergence of Spanning Tree
- 802.1s Multiple Spanning Tree
- 802.3ad Link Aggregation
- 802.3ae Gigabit Ethernet
- 802.3x Flow Control
- IP Multicast (IGMP Support v1, v2, per-VLAN Querier Offload)
- Jumbo Packet with MTU Discovery Support for Gigabit
- Link Flap Detection
- Dynamic Egress (Automated VLAN Port Configuration)

IP Routing

- RFC 1812 General Routing
- RFC 792 ICMP
- RFC 1256 ICMP Router Discovery Protocol
- RFC 826 ARP
- RFC 1027 Proxy ARP
- Static Routes
- RFC 1723 RIPv2 with Equal Cost Multipath Load Balancing
- RFC 1812 RIP Requirements
- RFC 1519 CIDR
- RFC 2338 Virtual Router Redundancy Protocol (VRRP)
- Standard ACLs
- DHCP Server RFC 1541/ Relay RFC 2131

Extended IP Routing

Software upgrade package N-EOS-L3, licensed on a per-chassis basis.

- RFC 1583/RFC 2328 OSPFv2
- RFC 1587 OSPFv2 NSSA
- RFC 1745 OSPF Interactions
- RFC 1746 OSPF Interactions
- RFC 1765 OSPF Database Overflow
- RFC 2154 OSPF with Digital Signatures (Password & MD5)
- OSPF with Multipath Support
- OSPF Passive Interfaces
- RFC 2391 Load Sharing Using Network Address Translation
- Extended ACLs
- Policy-based Routing
- RFC 1112 IGMP
- RFC 2236 IGMPv2
- DVMRP v3-10
- RFC 2361 Protocol Independent Multicast - Sparse Mode

Network Security and Policy Management

- 802.1X Port-based Authentication
- Web-based Authentication
- MAC-based Authentication
- Convergence Endpoint Discovery with Dynamic Policy Mapping (Siemens HFA, Cisco VoIP, H.323 and SIP)
- Multiple Authentication Types per Port Simultaneously

Standards and Protocols

- Multiple Authenticated Users per Port with Unique Policies per User/End System (VLAN Association Independent)
- RFC 3580 IEEE 802.1 RADIUS Usage Guidelines, with VLAN to Policy Mapping
- Worm Prevention (Flow Set-Up Throttling)
- Broadcast Suppression
- ARP Storm Prevention
- MAC-to-Port Locking
- Span Guard (Spanning Tree Protection)
- Stateful Intrusion Detection System Load Balancing
- Stateful Intrusion Prevention System and Firewall Load Balancing
- Behavioral Anomaly Detection/Flow Collector (Non-sampled Netflow)
- Static Multicast Group Provisioning
- Multicast Group, Sender, and Receiver Policy Control

Class of Service

- Strict Priority Queuing
- Weighted Fair Queuing with Shaping
- 16 Transmit Queues per Port (1000BaseX SFP and 10 Gigabit Ethernet Modules)
- 4 Transmit Queues per Port (10/100BaseTX, 100BaseFX and 1000BaseT Modules)
- Up to 1024 Rate Limiters per DFE
- Packet Count or Bandwidth-based Rate Limiters; Bandwidth Thresholds between 64 Kbps and 4 Gbps
- IP ToS/DSCP Marking/Remarking
- 802.1D Priority-to-Transmit Queue Mapping

Network Management

- NMS Console
- NMS Policy Manager
- NMS Inventory Manager
- NMS Automated Security Manager

Management, Control, and Analysis

- SNMP v1/v2c/v3
- Web-based Management Interface
- Industry Common Command Line Interface
- Multiple Software Image Support with Revision Roll Back
- Multi-configuration File Support
- Editable Text-based Configuration File
- COM Port Boot Prom and Image Download via ZMODEM
- Telnet Server and Client
- Secure Shell (SSHv2) Server and Client
- Cabletron Discovery Protocol
- Cisco Discovery Protocol v1/v2
- Syslog
- FTP Client
- Simple Network Time Protocol (SNTP)
- Netflow Version 5
- RFC 2865 RADIUS
- RFC 2866 RADIUS Accounting
- TACACS+ for Management Access Control
- Management VLAN
- 16 Many to-One-port, One-to-Many Ports, VLAN Mirror Sessions (64 when DFE deployed with an N1 Chassis)

IETF and IEEE MIB Support

- RFC 1156/1213 & RFC 2011 IP-MIB
- RFC 1493 Bridge MIB
- RFC 1659 RS-232 MIB
- RFC 1724 RIPv2 MIB
- RFC 1850 OSPF MIB
- RFC 2578 SNMPv2 SMI
- RFC 2579 SNMPv2-TC
- RFC 3417 SNMPv2-TM
- RFC 3418 SNMPv2 MIB
- RFC 2012 TCP MIB
- RFC 2013 UDP MIB
- RFC 2096 IP Forwarding Table MIB
- RFC 3411 SNMP Framework MIB
- RFC 3412 SNMP-MPD MIB
- RFC 3413 SNMPv3 Applications
- RFC 3414 SNMP User-based SM MIB
- RFC 2276 SNMP-Community MIB
- RFC 2613 SMON MIB
- RFC 2674 802.1p/Q MIB
- RFC 2737 Entity MIB
- RFC 2787 VRRP MIB
- RFC 2819 RMON MIB (Groups 1-9)
- RFC 3273 HC RMON MIB
- RFC 2863 IF MIB
- RFC 2864 IF Inverted Stack MIB
- RFC 2922 Physical Topology MIB
- RFC 3291 INET Address MIB
- RFC 3621 Power Ethernet MIB
- RFC 3415 SNMP View-based ACM MIB
- RFC 3635 EtherLike MIB
- RFC 3636 MAU MIB
- IEEE 8023 LAG MIB
- RSTP MIB
- USM Target Tag MIB
- U Bridge MIB
- Draft-ietf-idmr-dvmrp-v3-10 MIB
- Draft-ietf-pim-sm-v2-new-09 MIB
- SNMP-REARCH MIB
- IANA-ADDRESS-FAMILY-NUMBERS MIB
- IEEE 802.1PAE MIB

Private MIBs

- Ct-broadcast MIB
- Ctron-CDP MIB
- Ctron-Chassis MIB
- Ctron-igmp MIB
- Ctron-q-bridge-mib-ext MIB
- Ctron-rate-policying MIB
- Ctron-tx-queue-arbitration MIB
- Ctron-alias MIB
- Cisco-TC MIB
- Cisco-CDP MIB
- Cisco-netflow MIB
- Enterasys-configuration-management MIB
- Enterasys-MAC-locking MIB
- Enterasys-convergence-endpoint MIB
- Enterasys-notification-authorization MIB
- Enterasys-netfow MIB
- Enterasys-license-key MIB
- Enterasys-aaa-policy MIB
- Enterasys-class-of-service MIB
- Enterasys-multi-auth MIB
- Enterasys-mac-authentication MIB
- Enterasys-pwa MIB
- Enterasys-upn-tc MIB
- Enterasys-policy-profile MIB

Refer to DFE release notes for a complete list of supported MIBs

Specifications

Physical Specifications

- Dimensions (H x W x D): 46.43 cm x 6.05 cm x 29.51 cm (18.28" x 2.38" x 11.62")
- Net weight: 4.1 kg (9 lbs)

Environmental Specifications

- Operating Temperature: +5° C to +40° C (41° F to 104° F)
- Storage Temperature: -30° C to +73° C (-22° F to 164° F)
- Operating Humidity: 5% to 90% relative humidity, non-condensing
- Power Consumption: 100 to 125 VAC or 200 to 250 VAC; 50 to 60 Hz

Agency and Standards Specifications

- Safety: UL 60950, CSA 60950, EN 60950, EN 60825, and IEC 60950
- Electromagnetic compatibility: 47 CFR Parts 2 and 15, CSA C108.8, EN 55022, EN 55024, EN 61000-3-2, EN 61000-3-3, AS/NZS CISPR 22, and VCCI V-3

Power over Ethernet (PoE) Specifications

- IEEE 802.3af
- Total PoE Power: 4,800 W per chassis
- Supports Class 1 (4 W), Class 2 (7.5 W), and Class 3 (15.4 W) PoE devices
- A fully populated chassis can power Class 2 PoE device on all ports simultaneously
- Automated or manual PoE power distribution
- Per-port enable/disable, power level, priority safety, overload, and short-circuit protection
- System power monitor

Ordering Information

Part Number	Description
Platinum Distributed Forwarding Engines	
7K4297-04	Platinum DFE with 4 10 Gigabit Ethernet 10GBase XFP optics slots
7K4297-02	Platinum DFE with 2 10 Gigabit Ethernet 10GBase XFP optics slots
7K4290-02	Platinum DFE with 2 10-Gigabit Ethernet 10GBase XenPak optics slot
7G4205-72	Platinum DFE with 72 10/100/1000 ports via RJ45 connectors. Supports Power over Ethernet
7G4202-72	Platinum DFE with 72 10/100/1000 Ethernet ports via RJ45 connectors
7G4202-60	Platinum DFE with 60 10/100/1000 Ethernet ports via RJ45 connectors
7G4285-49	Platinum DFE with 48 10/100/1000 ports via RJ45 connectors. Supports Power over Ethernet and NEM
7G4282-49	Platinum DFE with 48 10/100/1000 Ethernet ports via RJ45 connectors. Supports Network Expansion Module
7G4282-41	Platinum DFE with 40 10/100/1000 Ethernet ports via RJ45 with one expansion module slot
7G4202-30	Platinum DFE with 30 10/100/1000 Ethernet ports via RJ45 connectors
7G4280-19	Platinum DFE with 18 1000 Base-X ports via mini-GBIC connectors and one expansion module slot
7G4270-12	Platinum DFE with 12 1000 Base-X ports via mini-GBIC connectors
7G4270-10	Platinum DFE with 10 1000 Base-X ports via mini-GBIC connectors
7H4385-49	Platinum DFE with 48 10/100 Ethernet ports via RJ45 connectors. Supports Power over Ethernet and NEM
7H4202-72	Platinum DFE with 72 10/100 Ethernet ports via RJ45 connectors
7H4203-72	Platinum DFE with 72 10/100 Ethernet ports via RJ21 connectors
7H4382-49	Platinum DFE with 48 10/100 Ethernet ports via RJ45 connectors. Supports E7 backplane connectivity and NEM
7H4383-49	Platinum DFE with 48 10/100 Ethernet ports via RJ21 connectors. Supports E7 backplane connectivity and NEM
7H4382-25	Platinum DFE with 24 10/100 Ethernet ports via RJ45 connectors. Supports E6 / E7 backplane connectivity and NEM
7H4284-49	Platinum DFE with 48 100Base-FX ports via MTRJ connectors
Network Expansion Modules and Network Security Modules	
7G-6MGBIC-A	A Network Expansion Module with 6 1000Base-X ports via mini-GBIC connectors
7G-6MGBIC-B	NEM with 6 1000Base-X ports via MGBIC w/100FX MGBIC support
7K-2XFP-6MGBIC	NEM with 2 ports 10 Gb Ethernet via XPF, 6 1000Base-X ports via MGBIC w/100 FX MGBIC support
7S-DSNA7-01	N-Series Security Module for Intrusion Detection
7S-NSTAG-01	N-Series Security Module for Network Access Control
WS-C20N-32	N-Series Wireless Controller Module

Continued

Mini-GBIC Modules	
MGBIC-LC01	Mini-GBIC with 1000Base-SX port via LC connector
MGBIC-LC03	Mini-GBIC with 1000Base-LX/LH over multimedia fiber port via LC connector (2 km Long Haul)
MGBIC-N-LC04	100BaseFX Mini GBIC w/LC connector for use with 7K-2XFP-6MGBIC and 7G-6MGBIC-B only
MGBIC-LC09	Mini-GBIC with 1000Base-LX port via LC connector
MGBIC-MT01	Mini-GBIC with 1000Base-SX port via MTRJ connector
MGBIC-02	Mini-GBIC with 1000Base-TX port via RJ45 connector
MGBIC-08	Mini-GBIC with 1000Base-LX/LH SMF port via LC connector (70 km Long Haul)
Software	
N-EOS-L3	Enterasys Operating System (EOS) Layer 3 routing upgrade for N-Series
N-EOS-PPC	Enterasys Operating System (EOS) Platinum DFE port capacity increase key
N-EOS-PUC	Enterasys Operating System (EOS) Platinum DFE extra user capacity activation key
10 Gigabit Ethernet XENPACs	
10GBASE-ER	10 Gigabit interface, 1550 nm, 9 micron single-mode fiber via SC connector (40 km)
10GBASE-LR	10 Gigabit interface, 1310 nm, serial optic single-mode fiber via SC connector (2-10 km)
10GBASE-LX4	10 Gigabit interface, 1310 nm, 62.5 and 50 micron multi-mode fiber via SC connector (33 m and 66 m)
10GBASE-SR	10 Gigabit interface, 850 nm, 62.5 and 50 micron multi-mode fiber via SC connector (33 m and 66 m)
10 Gigabit Ethernet XFPs	
10GBASE-ER-XFP	10 Gigabit interface, 1550 nm, 9 micron single-mode fiber via XFP connector (40 km)
10GBASE-LR-XFP	10 Gigabit interface, 1310 nm, serial optic single-mode fiber via XFP connector (2-10 km)
10GBASE-SR-XFP	10 Gigabit interface, 850 nm, 62.5 and 50 micron multi-mode fiber via XFP connector (33 m and 82 m)
10GBASE-CX4-XFP	10 Gigabit interface, Twin Axial, Copper SFF-8470 via XFP connector (15 m)
Other Options	
DFE-256MB-UGK	256 MB DIMM memory module

Notes

1. Platinum DFEs can be installed in any slot of a N7, N5, N3, N1 or E7 chassis

2. N7 and E7 chassis support up to 7 DFE modules with the 1,600 W AC power supply (p/n 6C207-3)

3. N5 chassis supports up to 5 DFE modules with the 1,200 W power AC supply (p/n 7C205-1)

4. N3 chassis supports up to 3 DFE modules with the 863 W power AC supply (p/n 7C203-1)

5. DFE p/n 7H4382-25, 7H4382-49, and 7H4383-49 can be used either to bridge the FTM1 and FTM2 backplanes in the E7 chassis, or to support the Network Expansion Module (NEM)

6. The 256 MB memory upgrade (DFE-256MB-UGK) is required for PIM-SM and LS-NAT

Warranty

As a customer-centric company, Enterasys is committed to providing quality products and solutions. In the event that one of our products fails due to a defect, we have developed a comprehensive warranty that protects you and provides a simple way to get your products repaired or media replaced as soon as possible.

The Enterasys N-Series comes with a one year hardware warranty. For full warranty terms and conditions please go to http://www.enterasys.com/support/warranty.aspx.

Service and Support

Enterasys Networks provides comprehensive service offerings that range from Professional Services to design, deploy and optimize customer networks, customized technical training, to service and support tailored to individual customer needs. Please contact your Enterasys account executive for more information about Enterasys Service and Support.

Contact Us

For more information, call Enterasys Networks toll free at 1-877-801-7082, or +1-978-684-1000 and visit us on the Web at enterasys.com

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